Perception of AI in Slovenia

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Abstract

This paper introduces the AI News Monitor system developed for real-time monitoring and analysis of artificial intelligence (AI) perception in global and local news media. Leveraging data from the Event Registry platform, the AI News Monitor tracks AI-related news articles across multiple dimensions, providing insights through three key views: a global historical overview, current global trends, and local trends specific to Slovenian media. The system facilitates both passive observation of AI discourse and active exploration of specific AI-related events. Our illustrative analysis reveals significant global trends, including heightened media focus on deep learning, generative AI, and robotics, and examines the implications of these trends on public trust in AI. Additionally, the paper discusses the practical applications of the AI News Monitor for stakeholders such as policymakers, journalists, business leaders, and researchers. We conclude with a discussion on the impact of media coverage on public perception of AI and propose possible future enhancements of the system, including broader language and source coverage.

Keywords

datasets, artificial intelligence, media monitoring, perception

1 Introduction

Artificial Intelligence (AI) is increasingly becoming an integral part of society, influencing various aspects of daily life and industries [4]. As AI continues to evolve, so does its portrayal in the media, which plays a critical role in shaping public perception and trust. Understanding how AI is perceived globally and locally is essential for policymakers, businesses, and researchers to ensure that AI technologies are developed and deployed in ways that are socially acceptable and trustworthy [3, 4].

In response to this need, we have developed the AI News Monitor system designed for real-time monitoring and exploratory analysis of AI-related news coverage. The AI News Monitor offers a comprehensive view of how AI is discussed in the media, capturing data from the Event Registry platform on a monthly basis [7].

The AI News Monitor system is structured around three main views: a global overview that presents historical data from the past year, global trends that highlight recent AI-related events, and local trends focusing on mentions of AI by Slovenian news sources. These views allow the users to either passively monitor ongoing developments in AI or actively explore specific events and trends that may influence public opinion.

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Following are the main scientific contributions of this paper:
(1) We present a methodology to understand public perception about AI in news.
(2) We analyse some trends in AI's Perception.
The remainder of the paper is structured as follows. Section 2 describes the methodology to collect historical data, AI news categories and gaining insights in public perception about AI in news. Section 3 presents the analysis of trends in AI's Perception. We present different user scenarios and possible applications of AI News Monitoring in Section 4 and discussion in Section 5. Section 6 concludes the paper and outlines possible areas of future work.

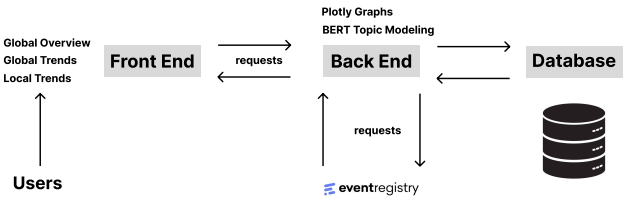

Figure 1: Architecture for Real-Time AI News Monitoring and Visualization based on Event Registry and implemented using Flask and Plotly.

2 Methodology

The proposed approach to creating a web service to analyze public perception involves two key steps: 1) identifying AI-related categories and gathering news within these categories, and 2) developing a web service that displays trends across these categories, news publishers, and highlights current trends among both global and local (Slovenian) news sources (see Figure 1).

Firstly, we selected AI-related categories based on the Slovenian AI observatory[1] and Wikipedia[2]. The key categories associated with Artificial Intelligence include 'Generative AI', 'Artificial Intelligence', 'NLP', 'Chat-GPT', 'Deep Learning', 'Robotics', 'Computer Vision', 'Neural Networks', 'Graph Neural Networks', 'Self-supervised Learning', and 'Zero-shot Learning'.

Next, we collected news articles from the last year related to these categories. These articles were classified into the appropriate categories based on Wikipedia concepts, and we also obtained sentiment data from Event Registry. The portrayal of AI-related news significantly impacts public perception, with the emphasis on risks, benefits, or ethical concerns shaping public opinion and driving narratives that can either build trust or instill fear[8],[12], [1].

To understand global trends, we retrieved news events published globally in the last month. For local trends, we focused on news

[1] http://siai.ijs.si/dashboards/Main/SlovenianObservatoryIntro?globalCountry=SVN
[2] http://country-dashboards.ijs.si/dashboards/Main/Index?

Figure 2: Time series of the number of news articles by specific areas (in colors, at the top). Detailed view upon precise exploration (middle) and corresponding sentiment of news from specific areas (at the bottom).

articles published by the top 50 Slovenian news publishers. Finally, we employed topic models to analyze the corpus of news articles and extract underlying themes [9], [2].

3 Analysis of trends of AI's Perception

3.1 Global Overview

The global overview provides a historical review of global AI-related news (see Figure 2). Users can explore the number of news articles across 13 AI fields (Generative AI, Chat-GPT, Deep Learning, Robotics, Computer Vision, Neural Networks, Graph Neural Networks, Artificial Intelligence, Federated Learning, Few-shot Learning, Meta Learning, Self-supervised Learning, and Zero-shot Learning) or by news providers and have an overview of the sentiment of the news.

Global trends allow for the review and exploration of global AI-related trends based on captured events from the last month. Figure 3 shows a detailed view of the Global Trends, where a written report of the number of news articles and events, a histogram of the number of AI-related news articles over time, and the ability to explore the last 10 events in a selected field.

3.2 Local Trends

Local trends allow for the review of news from Slovenian news providers for the last month. The local trends show the detailed view, where a written report of the number of news articles and events, a histogram of the number of AI-related news articles over time, and the ability to explore (see Figure 4).

3.3 EXAMPLES OF TRENDS

Figure 3: A detailed view of Global Trends, showing the option to select news events based on chosen AI fields.

3.3.1 Global Overview. In the historical overview of AI trends in March 2024 (Figure 2), there was a significant increase in the number of news articles and interest in deep learning, generative AI, and robotics. Specifically, on March 18th, there were 1,800 news articles about generative AI, 970 about robotics, and 274 about deep learning. This spike in news highlights several key events: one of the standout stories was the launch of Gen-2 by Runway, a generative video model capable of creating high-quality short clips. An important topic was the use of AI in political campaigns, particularly the creation of deepfakes and misinformation. This raised concerns about AI's impact on elections and voter trust. In the field of robotics, researchers were inspired by advancements in generative AI to develop more versatile robots. These new robots can perform various tasks using a single, comprehensive

model, demonstrating significant progress in robotic capabilities. Overall, the sentiment in March 2024 was positive (as seen from the sentiment analysis), reflecting enthusiasm and optimism regarding this technological progress. The increased media attention highlights the rapid development and growing importance of AI in various fields.

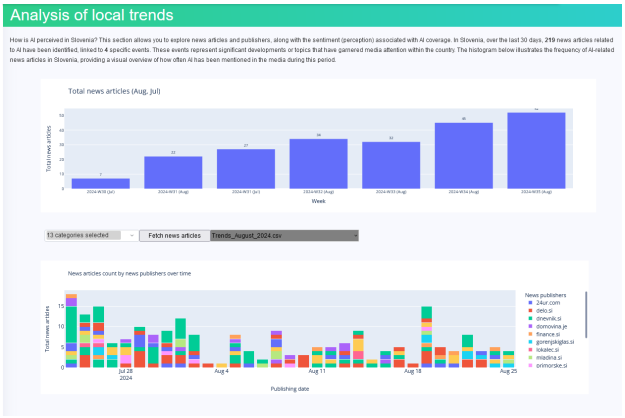

Figure 4: A detailed view of Local Trends, showing the option to select news events based on chosen AI fields.

3.3.2 Global Trends. In our examination of global trends, we selected the news story "AI and heat waves pose dual threats to the power grid" and found that two specific newspapers published more articles on this topic compared to others. The sentiment of these articles, as shown in the middle graph (Figure 4), fluctuates between positive and neutral. Upon delving into the content of these publications, we found that Forbes focused on the issue of fake news generated by AI, while Lexology explored future AI applications in various fields.

3.3.3 Local Trends. In the last month (at the time of writing the report, this was June 2024), there was an increase in AI-related news from Slovenian news providers, particularly from Delo.si and Sta.si (Figure 5). When analyzing the sentiment of these articles, most were neutral, with a few expressing positive opinions about AI. Delo.si focused on the growing adoption of AI by companies in Slovenia, highlighting discussions on the potential of quantum computing and recent advancements in AI technology. This coverage indicates a balanced view of AI's impact and potential. Sta.si reported on the construction of a state-of-the-art data center in Maribor, which will also house a supercomputer. This event represents a major development in Slovenia's technological infrastructure. Additionally, Sta.si wrote about AI trends that benefit semiconductor manufacturers, reflecting a positive outlook on the economic impact.

4 User Scenarios and Applications

The AI News Monitor can cater to a range of stakeholders with varying use case objectives [10], [6], [5]. Policy makers can utilize the developed system to track global and local trends in AI-related topics, enabling them to craft data-driven policies that balance innovation with societal concerns. Journalists can leverage the system to gather comprehensive insights into public sentiment and media coverage, enriching their reporting with accurate and timely information [11]. Detailed scenarios for both policy makers and journalists are explained below, illustrating how the AI News Monitor can support their specific goals. Other potential stakeholders are business executives, NGOs, researchers and educators.

Policy Makers: Scenario: A policymaker uses AI News Monitor to track trends in robotics.
Background: Jure, a decision-maker at a government agency for technology and innovation, is tasked with drafting new guidelines for the development and implementation of robotics in Slovenia. To understand the broader context and local trends, he needs to explore the global perception of robotics and compare it with local perspectives.
Steps: Step 1: Searching for a Global Overview: Jure logs into AI News Monitor and searches for "robotics" under the global overview section. The system displays a line chart showing how robotics has been mentioned over time, along with a sentiment graph for the past year. He finds that robotics is globally discussed with mostly positive sentiment, particularly in Asia and North America. Step 2: Global Trends: Jure selects "robotics" among the topics and reviews recent events on this subject. He chooses an event focusing on robotics in the EU and examines the sentiment of the publications and the main themes. In his browser, he looks at the specific articles and discovers that discussions predominantly revolve around automation and industrial robotics. Step 3: Local Trends in Slovenia: Next, Jure is interested in a review for Slovenia to understand how robotics is perceived at the local level. The dashboard for the selected topic displays an analysis of recent articles from Slovenian media. By using the browser, he discovers that discussions mainly focus on the impact of robotics on employment and the potential use of robots in healthcare. Jure finds that local concerns are more focused on social and economic impacts. He includes these insights in his preparatory documents for the new guidelines. Step 4: Compiling the Report and Recommendations: Finally, Jure exports key data, including sentiment graphs and media summaries, from AI News Monitor. He compiles a report that summarizes global trends and local concerns and proposes balanced guidelines that promote innovation in robotics while addressing social impacts.
Journalists: Scenario: A policymaker uses AI News Monitor to track trends in robotics.
Background: Ana, a journalist at a technology magazine, is tasked with writing an article on the growing trend of using generative AI to create videos. She needs to explore both global trends and local perspectives in Slovenia to provide a comprehensive overview.
Steps: Step 1: Searching for a Global Overview: Ana searches for "generative AI" under the global overview section. The system displays a line chart showing that this topic is on the rise, identifies the media outlets reporting on generative AI, and provides a sentiment graph for the past year. Step 2: Global Trends: Ana selects "generative AI" and reviews recent events on this topic. She focuses on deepfake video generation, checking who has written about it and what the main themes are. She then looks up these articles in her browser. Step 3: Local Trends in Slovenia: Ana shifts her focus to Slovenia to understand local views. The dashboard reveals that Slovenian media coverage is largely positive, particularly for certain providers. However, Ana realizes the need to include concerns about authenticity and misinformation to provide a balanced perspective. Step 4: Compiling and Writing: Ana exports key data, including sentiment graphs and media summaries, from AI News Monitor. She drafts her article, starting with global trends and then delving into specific concerns in Slovenia, enriched with visual data.

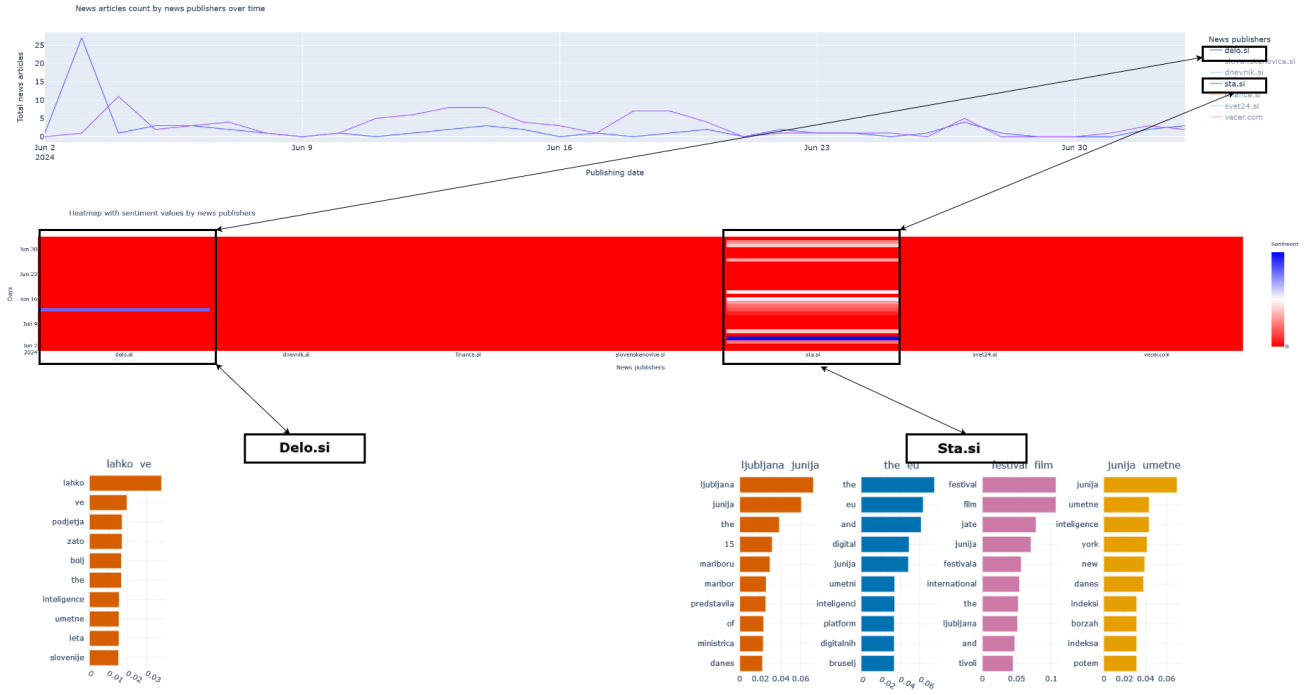

Figure 5: Time series of the number of news articles by news provider in Slovenia (at the top). Sentiment analysis (in the middle) and frequency of topics for this period (at the bottom).

5 Discussion

Services like AI News Monitor can play a role in fostering greater transparency around AI by offering detailed insights into how AI is being discussed across various media platforms. By tracking public sentiment and highlighting both positive and negative trends, it helps to ensure that the development and deployment of AI technologies are aligned with public concerns and expectations.

While AI News Monitor offers valuable insights, it has limitations, such as its reliance on media reporting, which may not capture the full spectrum of public opinion. Additionally, potential biases in media sources or the algorithms used for sentiment analysis could skew the results, presenting challenges in ensuring a fully accurate and balanced representation of public perception.

6 Conclusions

AI News Monitor was developed to understand and track public sentiment around AI, offering policymakers, journalists, and other stakeholders the insights needed to make informed decisions. AI perceptions can be monitored globally and locally, for the context of Slovenia. However, there are opportunities for future work to enhance its capabilities. Expanding the its coverage to include more languages and diverse sources would provide a more global perspective, while refining sentiment analysis techniques could improve accuracy and reduce potential biases.

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